NOTICE OF INTENT FOR AN ECOLOGICAL RESTORATION PROJECT
TWO IMPOUNDMENTS OF NASHOBA BROOK: ICE HOUSE POND AND ROBBINS MILL POND

INTRODUCTION:
Water chestnut (*Trapa natans*) is a non-native and invasive aquatic plant. It is an annual species that spreads rapidly, chokes out native vegetation, and causes a decline in the health of the water resource itself due to oxygen depletion. The dead then decaying plants add to the muck depth at the bottom of the ponds. The plants spread by seeds that are extremely tough and spiny. Over the years water chestnut has formed a thick carpet over an increasingly large area of each pond. Unchecked, this carpet of growth will continue to expand each summer. The proposed project is intended to eliminate the infestation to the maximum possible extent. Removal of the plants is an effective means of controlling this weed.

PROJECT NARRATIVE:
Water chestnut removal – Nashoba Brook Pursuant to the Notice of Intent filing requirements outlined in 310CMR 10.12(1)(f), the Town of Acton plans to contract to have water chestnut mechanically harvested from two impoundments on Nashoba Brook, (a) Robbins Mill Pond, and (b) Ice House Pond (see attached locus map) and as permitted in 10.53(4)5 for Ecological Restoration.

PROJECT GOAL:
10.12(1)(a) Water chestnut populations have continued to expand at a rate that simple hand-pulling cannot keep up with. For the past 5 years, volunteers coordinated by the Town of Acton Natural Resources Department have held work parties to hand remove water chestnuts from the Nashoba Brook waterway. Our goal is to publicly fund a three year mechanical harvesting of water chestnuts in an effort to get ahead of the rapid infestation. After the three year intensive mechanical harvesting we are optimistic that work parties will be able to stay ahead of the re-colonization of this aquatic invasive species.
10.12(1)(b) See attached aerial photographs of the two project locations.

10.12(1)(c) CONSTRUCTION SEQUENCE:
Solitude Lake Management will meet with Natural Resources Department staff to agree upon the optimum time to harvest plants. The focus area for that season's mechanical harvesting will be field verified.

- At Robbins Mill Pond water chestnuts will be deposited on shore at 843 Main Street on private property. The property owner has agreed to be a participant in the project and will transport the harvested plants to a de-watering composting location outside of the 100' wetlands buffer.
- At Ice House Pond harvested plants will be deposited at an existing boat launch and transported to a de-watering location within an existing parking lot by Natural Resources staff.

ADDITIONAL INFORMATION
According to the document ***GUIDANCE FOR AQUATIC PLANT MANAGEMENT IN LAKES AND PONDS As It Relates to the Wetlands Protection Act*** Published by the Mass DEP Bureau of Resource Protection, Wetlands/Waterways Program in April 2004, Principal Authors from MA DEP: Lealdon Langley; Lisa Rhodes; and Michael Stroman, the following requirements for harvesting projects will be fulfilled:

1. Areas of target species for control and areas of non-target species should be identified and indicated on a map of appropriate scale.
2. Methods for minimizing turbidity during harvesting should be identified and implemented when feasible.
3. A method for collection of plant material that is cut and a disposal location of plant material that is to be removed from the water body should be identified in order to prevent decomposition that may result in lower dissolved oxygen in the water column.

Robbins Mill Pond:

1. See attached map indicating locations of non-target species.
2. The mechanical harvester will make best reasonable efforts not to cause increased turbidity by staying away from rocks and shallow areas and maintaining a consistent speed while on the pond.
3. Plant material that is cut shall be collected, removed from the water body, and disposed of in the property owner's compost pile XXX feet from the pond's edge in order to prevent decomposition that may result in lowered dissolved oxygen in the water column.

Ice House Pond:

1. See attached map indicating locations of non-target species.
2. The mechanical harvester will make best reasonable efforts not to cause increased turbidity by staying away from rocks and shallow areas, and maintaining a consistent speed while on the pond.
3. Plants will be removed from the pond's edge and transported up to the parking lot for Ice House Pond where they will dewater on flat ground. Town of Acton vehicles will remove the plants by truck for composting. In this way the plants will not decompose in the water column and so will not lower the dissolved oxygen in the pond.

In Appendix A: Sample Conditions of the above document, item 16 states:
"The applicant shall develop a pre-and post-management monitoring program to identify new growth of target species in early stages. Strategies to address new growth should be considered and implemented…to assist in the development of long-term management strategies."

We have been monitoring the water chestnut growth on these two ponds for decades. In 1997, Ice House Pond was permitted to be de-watered and dredged because it was 100% covered in dense water chestnut. In 2015 a Community Preservation Act grant was awarded to fund mechanical harvesting for 3 consecutive years. Based on observations of work done in the Sudbury/Concord/Assabet River watershed, mechanical harvesting has shown to make the biggest improvement on restoring the previously covered area into open water. Acton Natural Resources took aerial photography in 2015 before and after mechanical harvesting and we will continue to do the same going forward each year.

Non-target species:
Any fish, turtles, frogs, snails and lily pads drawn onto the conveyer by the harvester will be spotted and manually returned to the water immediately.

The following excerpt was taken from the publication, ***EUTROPHICATION AND AQUATIC PLANT MANAGEMENT IN MASSACHUSETTS, Final Generic Environmental Impact Report, JUNE 2004,*** **Section 4.0 Methods to Control**

Aquatic Plants, Page 4-5. This section states that mechanical harvesting can be effective to control the plants as long as precautions are taken to reduce turbidity of the water and spread of seeds.

	solution until washed out of system. ♦ Opaque sheet material applied to water surface		with water ♦ Covers inhibit gas exchange with atmosphere
4) Mechanical removal ("harvesting")	♦ Plants reduced by mechanical means, possibly with disturbance of soils ♦ Collected plants may be placed on shore for composting or other disposal ♦ Wide range of techniques employed, from manual to highly mechanized ♦ Application once or twice per year usually needed	♦ Highly flexible control ♦ May remove other debris ♦ Can balance habitat and recreational needs	♦ Possible impacts on aquatic fauna ♦ Non-selective removal of plants in treated area ♦ Possible spread of undesirable species by fragmentation ♦ Possible generation of turbidity
4.a) Hand pulling	♦ Plants uprooted by hand ("weeding") and preferably removed	♦ Highly selective technique	♦ Labor intensive ♦ Difficult to perform in dense stands
4.b) Cutting (without collection)	♦ Plants cut in place above roots without being harvested	♦ Generally efficient and less expensive than complete harvesting	♦ Leaves root systems and part of plant for re-growth ♦ Leaves cut vegetation to decay or to re-root ♦ Not selective within applied area